

Cover Crop as Renovation in Hay Rotation

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June 4, 2021

County: Park

Average Annual Precip: 14-15"

MLRA: 44B, Central Rocky Mountain Valleys

Dominant Soil Type: 4B Kremlin-Rothiemay loam complex, 0-4% slopes

Acres: 64

Planting Date: June 10, 2020

Seeding Rate: 914,317 seeds/acre, or 52 lb PLS/acre

Seed Cost: \$36.12/acre (inoculant, seed, and delivery)

Seeding Method: No-till drill

Row Spacing: 7.5"

Tillage: No-till

Previous Crop and Year: Hay, 2 tons/ac.

Herbicides: Glyphosate pre-emergence

Post: None

Insecticides/Fungicides: None

Fertilizer: None

Irrigation: Center pivot irrigation

Termination Date: October 2020

Termination Method: Frost

Next Crop: Spring wheat, seeded May 2021



Fig. 1. Cover crop August 5 2020. Ted Nelson NRCS Livingston Supervisory District Conservationist.

Monthly Precipitation at Livingston, MT

Livingston	J	F	M	A	M	J	J	A	S	O	N	D	Total
30 yr avg 1981-2001	0.49	0.51	0.88	1.72	2.62	2.56	1.38	1.16	1.26	1.18	0.63	0.51	14.9
2019	0.21	0.26	0.33	3.44	2.51	1.89	2.81	0.8	3.78	1.32	0.67	0.5	18.07
2020	0.26	0.51	1.2	0.64	1.53	2.33	0.69	0.71	0.31	2.12	0.59	0.2	11.09

Fig. 2. Monthly precipitation at Livingston, MT. Western Regional Climate Center, station #245086.

Introduction:

This field was in a grass/alfalfa mix in recent years and had recently been converted from flood irrigation to sprinkler irrigation. The producer wanted to increase diversity of crops in the rotation for this field and add supplemental grazing. Contracted in 2018. Grazing was allowed.

Results:

Sampled on August 5, 2020 There were 56 growing days from the time of seeding to the time of clipping and 1405 Growing Degree Days (Base 40) for the same timeperiod. Two clippings were taken in soil type 4B. Although the entire field is mapped as the same soil type, there was a visual difference between the west and east sides of the field.

Cover Crop Species	Bulk Seeding Rate (lb/ac)	Seed Mix %
Peas	31	10
Foxtail Millet (German)	3	43
Sorghum/Sudangrass	6	9
Barley	12	15
Forage Collard	1	19
Buckwheat	2	3
Sunflower	1	1
TOTAL	56	100

Each side of the field was sampled separately. Plants were air-dried at the office. Total above ground biomass after air-drying was an average of 6686 lb/acre, or 3.3 tons/acre. Assuming 915 lbs of forage per animal month, and a 30% utilization rate on 65 acres, there were 142 AUMs available from this cover crop planting.

Summary and Discussion:

Overall, this cover crop grew very well. The producer and field office were pleased with the excellent growth. This cover crop was grazed for economic return.

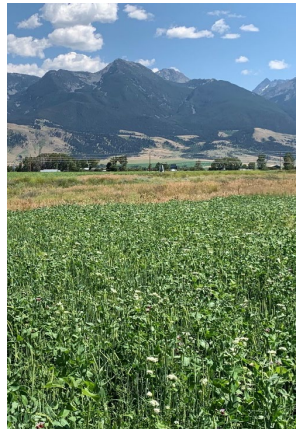


Fig. 2. Cover crop at time of clipping, August 5, 2020. Ted Nelson, NRCS-DC.